KOSOWICZ, Jerzy; ROGUSKA, Jadwiga; NALEWAJKO, Jolanta

Value of electrocardiography in the evaluation of hormonal
therapy of pituitary hypofunction. Endokr. Pol. 15 no.2:
229-236 Mr-Ap '64.

1. II Klinika Chorob Wewnetrznych Akademii Medycznej w Poznaniu
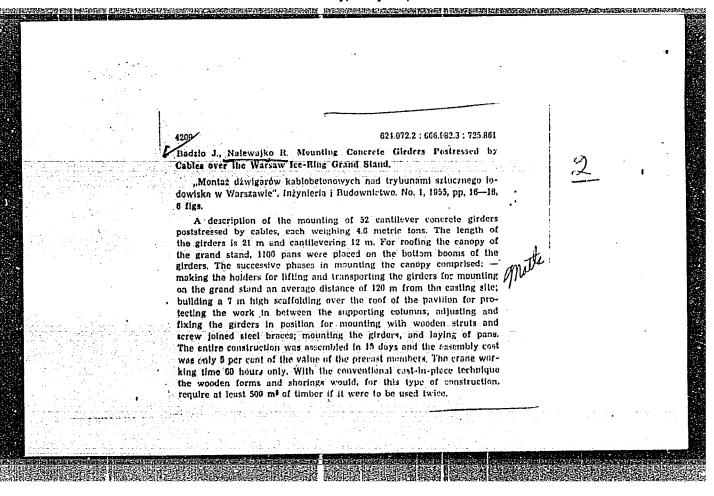(Kierownik: prof. dr. J. Roguski).

NALEWAJKO, LIDIA

KRUS, Stefan.;NALEWAJKO, Lidia.

Bilateral symmetric necrosis of the renal cortex. Polski tygod. lek.
12 no.16:592-597 15 Apr '57.

1. (Z Zakladu Anatomii Patologicznej Akademii Medycznej w Warszawie;
kierownik: prof. dr med. Ludwik Paszkiewicz; z II Kliniki Chorob
Wewnetrznych Akademii Medycznejw Warszawie; kierownik: Prof. dr med.
Dymitr Aleksandrow).Warszawa 1, ul. Chalubinskiego 5, Zaklad Anatomii
Patologiczi.ej.
            (KIDNEY DISEASES
               Necrosis of cortex, bilateral symmetric (Pol))

4209

621.072.2 : 666.982.3 : 725.861

Badzlo J., Nalewajko R. Mounting Concrete Girders Postressed by Cables over the Warsaw Ice-Ring Grand Stand.

„Montaż dźwigarów kablobetonowych nad trybunami sztucznego lodowiska w Warszawie". Inżynieria i Budownictwo, No. 1, 1955, pp, 16—18, 6 figs.

A description of the mounting of 52 cantilever concrete girders poststressed by cables, each weighing 4.6 metric tons. The length of the girders is 21 m and cantilevering 12 m. For roofing the canopy of the grand stand, 1100 pans were placed on the bottom booms of the girders. The successive phases in mounting the canopy comprised: — making the holders for lifting and transporting the girders for mounting on the grand stand an average distance of 120 m from the casting site; building a 7 m high scaffolding over the roof of the pavilion for protecting the work in between the supporting columns; adjusting and fixing the girders in position for mounting with wooden struts and screw joined steel braces; mounting the girders, and laying of pans. The entire construction was assembled in 15 days and the assembly cost was only 5 per cent of the value of the precast members. The crane working time 60 hours only. With the conventional cast-in-place technique the wooden forms and shorings would, for this type of construction, require at least 500 m³ of timber if it were to be used twice.

NALEWAJSKI, Janusz

They did not stop working; on the socialist labor competition
efforts of the crew of the Building Elements Production Works
in Lubartow. Przem mat bud 9 no.25:3 18 Je '62.

NALEWAJSKI, Janusz

A report from the Lublin Asbestos Tile Works. Przem mat bud
9 no.26:3 25 Je '62.

KLEWENHAGEN, Stanislaw; NALEWAJSKI, Wieslaw

Automatic syringe — a device for rapid injection of contrast medium. Pol. przegl. radiol. 28 no.6:613-618 N-D '64.

1. Z Zakladu Radiologii Akademii Medycznej w Poznaniu (Kierownik: prof. dr. med. B. Gladysz) i Katedry Obrabiatel Politechniki Poznanskiej (Kierownik: doc. inz. M. Tutak).
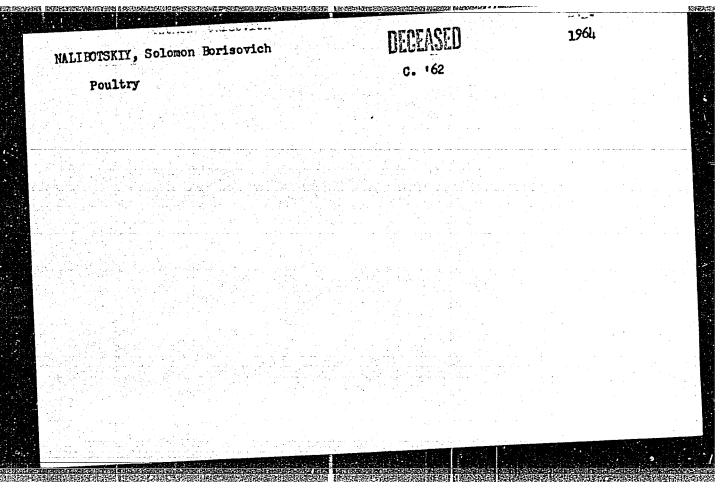
NALEZYTY, Stefan, mgr inz.

Modernization of the No.1 paper machine in the Paper Plant
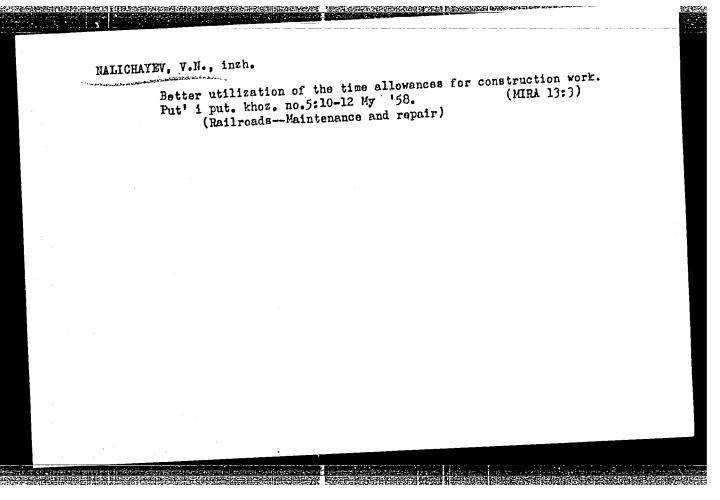in Jeziorna. Przegl papier 19 no.10:326-330 O'63.
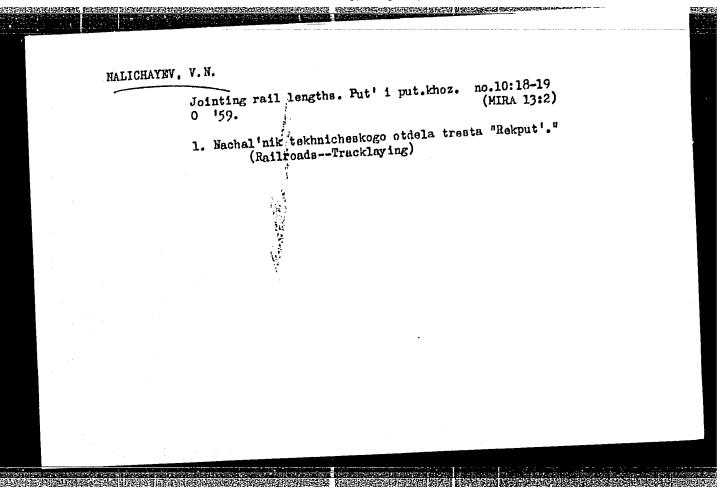
1. Warszawskie Zaklady Papiernicze, Warszawa.

SHNITNIKOV, A.V.;   NALIBKIN, D.V., akademik.

Variability in mountain glaciation of Eurasia in the late Glacial and post-
glacial periods and its absolute chronology. Dokl.AN SSSR 90 no.4:643-646
Je '53.   (MLRA 6:5)

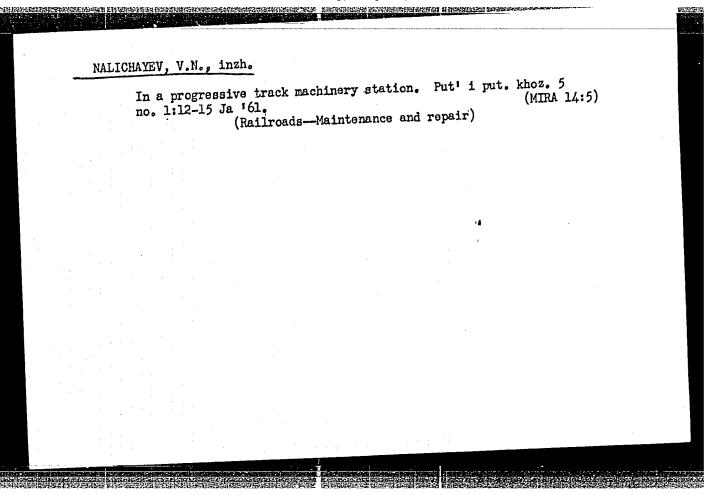1. Akademiya Nauk SSSR (for Nalibkin).   (Glacial epoch)

NALIBOTSKIY, Solomon Borisovich

Poultry

DECEASED

c. '62

1964

NALICHAYEV, V.N., inzh.

Better utilization of the time allowances for construction work.
Put' i put. khoz. no.5:10-12 My '58.   (MIRA 13:3)
       (Railroads--Maintenance and repair)

NALICHAYEV, V.N.

Jointing rail lengths. Put' i put.khoz.   no.10:18-19
O '59.   (MIRA 13:2)

1. Nachal'nik tekhnicheskogo otdela tresta "Rekput'."
         (Railroads--Tracklaying)

NALICHAYEV, Vladimir Nikolayevich, inzh.; FEDULOV, Vasiliy Fedorovich, inzh.; KANTOR, V.B., inzh., retsenzent; SERGEYEVA, A.I., inzh., red.; USENKO, L.A., tekhn. red.

[Tracklaying and maintenance of tracks with reinforced-concrete ties; practices of track machinery points and track divisions] Ukladka i soderzhanie puti na zhelezobetonnykh shpalakh; opyt putevykh mashinnykh stantsii i distantsii puti. Moskva, Vses. izdatel'sko-poligr.ob"edinenie M-va putei soobshcheniia, 1961. 69 p.
(MIRA 14:12)

(Railroads—Maintenance and repair) (Railroads—Ties, Concrete)

NALICHAYEV, V.N., inzh.

In a progressive track machinery station. Put' i put. khoz. 5
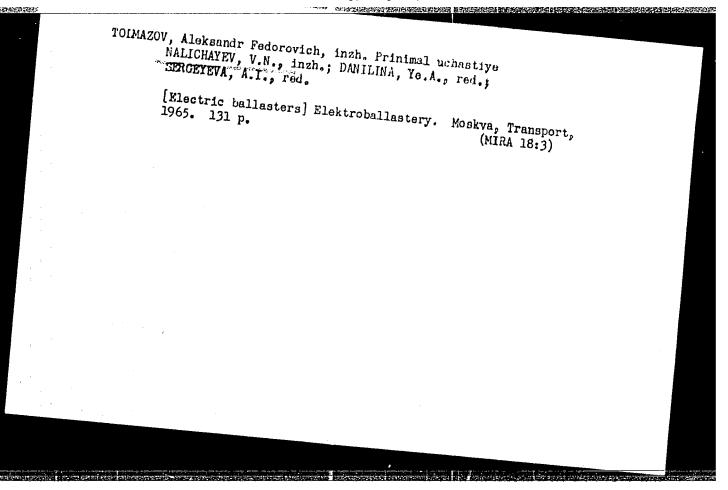no. 1:12-15 Ja '61.   (MIRA 14:5)
            (Railroads—Maintenance and repair)

NALICHAYEV, Vladimir Nikolayevich; SERGEYEVA, A.I., red.

[Highly productive utilization of track machinery and
mechanisms] Vysokoproizvoditel'noe ispol'zovanie puto-
vykh mashin i mekhanizmov. Moskva, Transport, 1964.
125 p.   (MIRA 17:10)

TOLMAZOV, Aleksandr Fedorovich, inzh. Prinimal uchastiye
NALICHAYEV, V.N., inzh.; DANILINA, Ye.A., red.;
SERGEYEVA, A.I., red.

[Electric ballasters] Elektroballastery. Moskva, Transport,
1965. 131 p.
                                     (MIRA 18:3)

USSR / Farm Animals. Wild Animals.   Q-4

Abs Jour : Ref Zhur - Biol., No 10, 1958, No 45269

Author   : Nalimov, A. I.
Inst   : Not given
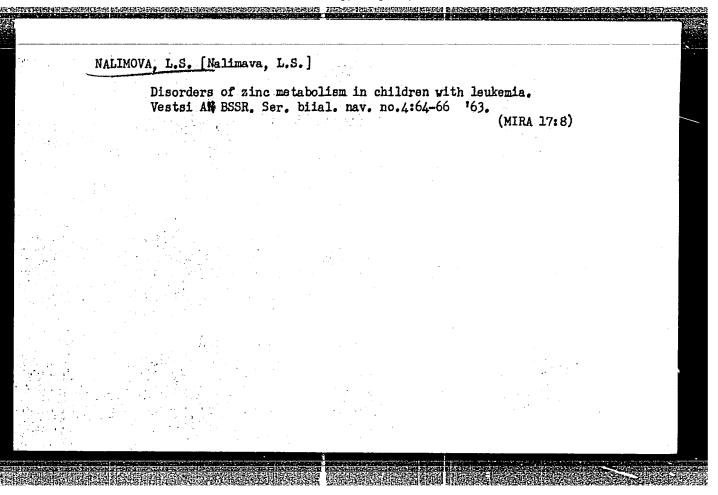Title   : On the Feeding of Edible Fungi to Fur-Bearing Animals.

Orig Pub : Karakulevodstvo i zverovodstvo, 1956, No. 5, 60.

Abstract : At the fur farming kolkhoz of the Tyumen' Oblast', an exp-
            eriment was carried out in regard to the feeding of edible
            fungi instead of meat and grain to silver-black foxes. The
            findings were: 100% of vixen fed fungi were fertilized; there
            were no abortions; the output of young was 4.65 whelps per
            vixen; the young foxes developed normally.

Card 1/1

NALIMAVA, L.S.

Cobalt metabolism in children with leukemia. Vestsi AN BSSR Ser.
biial. nav. no.1:95-99 '62.   (MIRA 17:9)

NALIMOVA, L.S. [Nalimava, L.S.]

Disorders of zinc metabolism in children with leukemia.
Vestsi AN BSSR. Ser. biial. nav. no.4:64-66 '63.

(MIRA 17:8)

NALIMOV, B.S., polkovnik meditsinskoy sluzhby

    All-Union therapeutic conference. Voen.-med., zhur. no.9:90-93
    S '55.   (MLRA 9:9)
        (ANTIBIOTICS)

NALIMOV, B.S., kandidat meditsinskikh nauk (Leningrad)

Myocardial infarct in subacute septic endocarditis. Klin.med. 35 no.6:
67-69 Je '57.   (MLRA 10:8)

1. Iz kafedry gospital'noy terapii (nach. - chlen-korrespondent AMN
SSSR prof. N.S.Molchanov) Voyenno-meditsinskoy ordena Lenina akademii
imeni S.M.Kirova
       (ENDOCARDITIS, SUBACUTE ACTERIAL, compl.
          myocardial infarct)
       (MYOCARDIAL INFARCT, etiol. and pathogen.
          subacute bact. endocarditis)

NALIMOV, B.S., kand.med.nauk (Leningrad)

Clinical and anatomical parallels in myocardial infarction. Klin.
med. 36 no.1:43-49 Ja '58.   (MIRA 11:3)

1. Iz kafedry gospital'noy terapii (nach.-chlen-korrespondent AMN
SSSR prof. N.S.Molchanov) Voyenno-meditsinskoy ordena Lenina
akademii imeni S.M.Kirova.
           (MYOCARDIAL INFARCT, pathol.
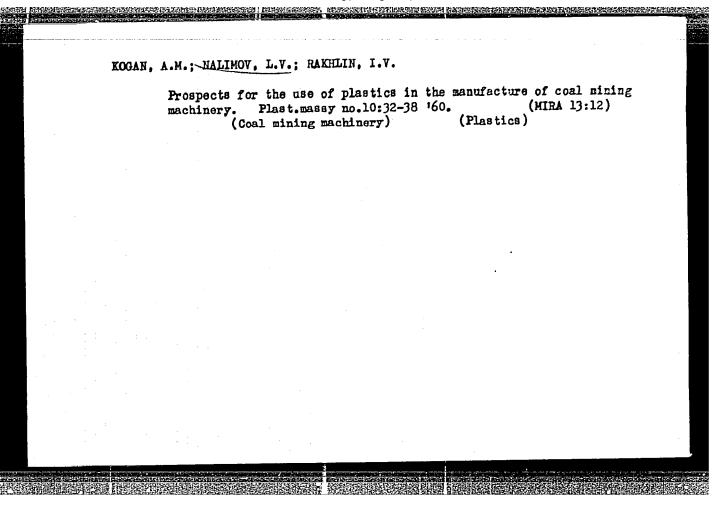   clin. & anat. parallels (Rus)

KOGAN, A.M., inzh.; CHERNAVKIN, N.N., inzh.; NALIMOV, L.V., inzh.;
     NURMUKHAMEDOVA, V.F., red.izd-va; KOROVENKOVA, Z.A.,
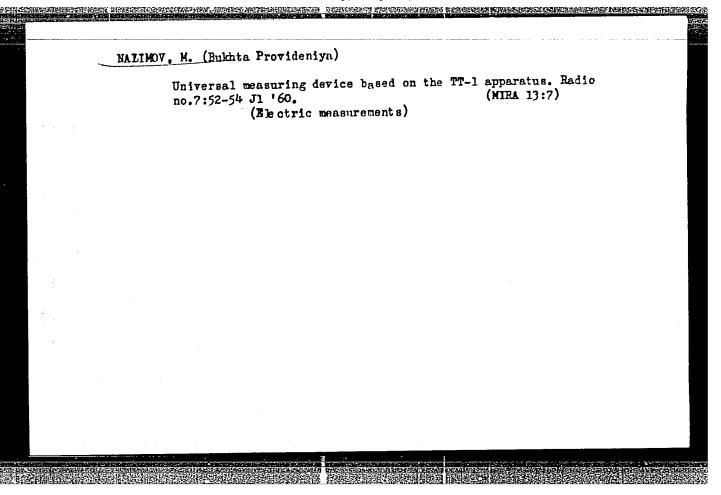   tekhn.red.; KONDRAT'YEVA, M.A., tekhn.red.

[Instructions on conducting inspections, making adjustments
and testing mine pumping systems] Rukovodiashchie materialy
po provedeniiu revizii, naladok i ispytanii shakhtnykh vodo-
otlivnykh ustanovok. Moskva, Ugletekhizdat, 1959. 157 p.
                                        (MIRA 13:1)
1. Vsesoyuznyy nauchno-issledovatel'skiy i proyektno-tekhno-
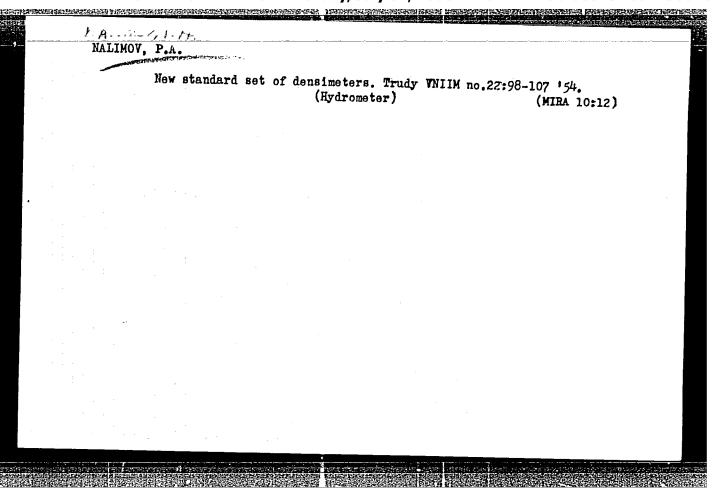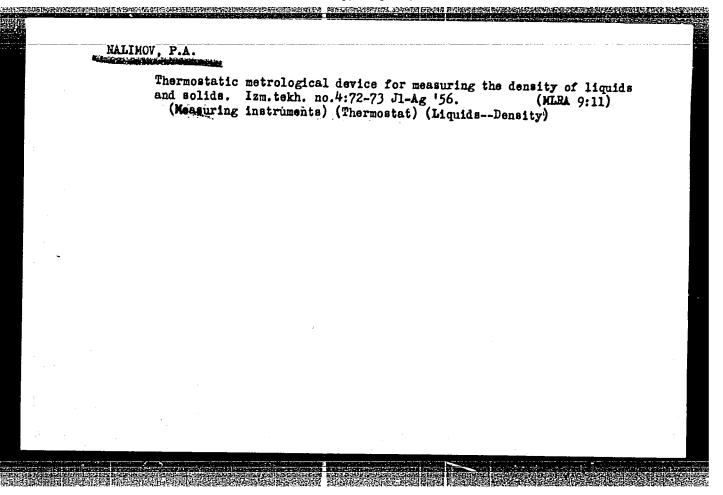logicheskii institut ugol'nogo mashinostroyeniya.
                    (Mine pumps)

KOGAN, A.M.; NALIMOV, L.V.; RAKHLIN, I.V.

Prospects for the use of plastics in the manufacture of coal mining
machinery.   Plast.massy no.10:32-38 '60.   (MIRA 13:12)
          (Coal mining machinery)   (Plastics)

NALIMOV, M. (Bukhta Provideniya)

Universal measuring device based on the TT-1 apparatus. Radio
no.7:52-54 Jl '60.   (MIRA 13:7)
          (Electric measurements)

NALIMOV, N.P.; DOLGORUKOV, Yu.A.; PANKRATOV, D.I.

Operation of Public Designing Offices. Ogneupory 27 no.7:306-307 '62.   (MIRA 15:8)
(Refractories industry—Equipment and supplies)
(Design, Industrial)

HALIMOV, P.A.

Interference method used for the determination of densities of weak water-alcohol solutions. Trudy VNIIM no.11:31-36 '50.

(MIRA 11:6)

(Interferometry)   (Liquids--Density)

NALIMOV, P.A.

New standard set of densimeters. Trudy VNIIM no.22:98-107 '54.
                    (Hydrometer)   (MIRA 10:12)

NALIMOV, P.A.

Thermostatic metrological device for measuring the density of liquids
and solids. Izm.tekh. no.4:72-73 Jl-Ag '56.   (MLRA 9:11)
  (Measuring instruments) (Thermostat) (Liquids--Density)

NALIMOV, V.A.

24(0); 5(4); 6(2)   PHASE I BOOK EXPLORATION   SOV/2215

Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii imeni
D.I. Mendeleyeva

Referaty nauchno-issledovatel'skikh rabot; sbornik No.2 (Scientific
Research Abstracts; Collection of Articles, Nr 2) Moscow,
Standartgiz, 1958. 139 p. 1,000 copies printed.

Additional Sponsoring Agency: USSR. Komitet standartov, mer i
izmeritel'nykh priborov.

Ed.: S. V. Reshetina; Tech. Ed.: M. A. Kondrat'yeva.

PURPOSE: These reports are intended for scientists, researchers,
and engineers engaged in developing standards, measures, and
gages for the various industries.

COVERAGE: The volume contains 128 reports on standards of measure-
ment and control. The reports were prepared by scientists of
institutes of the Komitet standartov, mer i izmeritel'nykh
priborov pri Sovete Ministrov SSSR (Commission on Standards,
Measures, and Measuring Instruments under the USSR Council of
Ministers). The participating institutes are: VNIIM
Vsesoyuznyy nauchno-issledovatel'skiy metrologii imeni D.I.
Mendeleyeva (All-Union Scientific Research Institute of Met-
rology imeni D.I.-Mendeleyev) in Leningrad; Sverdlovsk branch
of this institute; VNIIK - Vsesoyuznyy nauchno-issledovatel'skiy
institut Komiteta standartov, mer i izmeritel'nykh priborov
(All-Union Scientific Research Institute of the Commission
on Standards, Measures, and Measuring Instruments), created
from MGIMIP - Moskovskiy gosudarstvennyy institut mer i
izmeritel'nykh priborov (Moscow State Institute of Measures
and Measuring Instruments) October 1, 1955; VNIIFTRI -
Vsesoyuznyy nauchno-issledovatel'skiy institut fiziko-tekhni-
cheskikh i radiotekhnicheskikh izmereniy (All-Union Scientific
Research Institute of Physicotechnical and Radio-engineering
Measurements) in Moscow; KhGIMIP - Khar'kovskiy gosudarstvennyy
institut mer i izmeritel'nykh priborov (Khar'kov State Institute
of Measures and Measuring Instruments); and NGIMIP - Novosi-
birskiy gosudarstvennyy institut mer i izmeritel'nykh priborov
(Novosibirsk State Institute of Measures and Measuring Instru-
ments). No personalities are mentioned. There are no references.

Gorodetskiy, and A.S. Shneyderman (NIIvesprom). Studying the Reasons
for Variations of Readings of Car Scales   26

Marks, L.A., and S.N. Chernets (KhGIMIP). Developing a Simplified
Method for Checking Small Weights Used in Analysis   28

Malikov, P.A. (VNIIM Thermostatic Apparatus for Metrological
Work in Fluid and Solid Density Measurements   29

Time and Frequency Measurements   (Tovchigrechko, S.S., Editor, Can-
didate of Technical Sciences; Tchorzhevskiy, O.A., Candidate of
Technical Sciences)

Tovchigrechko, S.S. (VNIIM). Studying Astronomical Pendulum
Clocks of the "Etalon" Plant and Reducing the Variations from
Their Daily Rate to ± 0.003 Seconds   32

Soloviyeva, L.A. (VNIIM). Temperature Studies of Astronomical
Pendulum Clocks of the AChR Type   33

Card 7/27

NALIMOV, P.A., kand.tekhn.nauk; KREMLEVSKIY, P.P., kand.tekhn.nauk, red.
POL'SKAYA, R.G., tekhred.

[Alcoholometric tables] Alkogolometricheskie tablitsy. Moskva,
Gos. izd-vo standartov "Standartgiz," 1959. 357 p. (Russia(1923-
U.S.S.R. Komitet standartov, mer i izmeritel'nykh priborov.
Trudy institutov Komiteta, no. 41)   (MIRA 14:2)
                        (Alcoholometry)

NALIMOV, P. A.

Experimental investigation of the density of water-alcohol
solutions. Trudy inst. Kom. stand., mer i izm. prib. no.50:
181-192 '61.   (MIRA 16:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii
im. Mendeleyeva.
                    (Alcohols—Density)

VASIL'YEV, Yu.S., dots., kand. tekhn. nauk; VEL'NER, Kh.A., dots.,
kand. tekhn. nauk; GINDUS, D.O., inzh.; GOLOVACHEVSKIY,
N.I., dots., kand. tekhn. nauk; GROMOV, A.I., inzh.;
DOMANSKIY, L.K., inzh.; ISAYEV, Yu.M., inzh.; KULESH, N.P.,
dots., kand. tekhn. nauk; MIKHALEV, B.N., dots., kand.
tekhn. nauk; MOROZOV, A.A., prof., doktor tekhn. nauk
[deceased]; NALIMOV, S.M., st. nauchn. sotr., kand. tekhn.
nauk; REZNIKOVSKIY, A.Sh., kand. tekhn. nauk; SVANIDZE, G.G.,
doktor tekhn. nauk; TANANAYEV, A.V., dots., kand. tekhn. nauk;
KHAZANOVA, A.Z., inzh.; CHERNYATIN, I.A., st. nauchn.
sotr., kand. tekhn. nauk; SHCHAVELEV, D.S., prof., doktor
tekhn. nauk; YAGODIN, N.N., st. nauchn. sotr., kand. tekhn.
nauk; LEONOVA, B.I., red.

[Utilization of water power] Ispol'zovanie vodnoi energii.
Moskva, Energiia, 1965.   563 p.   (MIRA 19:1)

NALIMOV, S. N.

Subject	:	USSR/Engineering	AID P - 2123

Card 1/1   Pub. 35 - 12/20

Author   : Nalimov, S. N.

Title   : Operation of flat gates in winter

Periodical   : Gidr. stroi., no. 3, 33-35, 1955

Abstract   : The author reports on observations made at both Niva
Hydro-Power Plants on the operation of gates during
severe winter conditions. Some defects in the con-
struction are listed. The author recommends the use
of sector gates in the northern part of the country,
like the gates at the Tuloma Hydro-Power Plant, in
order to better cope with the freezing-up of the
gates and mechanisms.

Institution : None

Submitted   : No date

NALIMOV, S.M., kandidat tekhnicheskikh nauk.

Publicizing experience operating suction pipe gates of hydroelectric
power stations. Gidr.stroi. 25 no.2:33-37 '56.   (MLRA 9:8)
(Hydroelectric power stations)

Ca

Effect of oxygen and sulfur on the photoelectric effect from alkali metals. V. V. Nalimov and P. V. Timoferv. *J. Tech. Phys.* (U.S. S. R.) 3, 602-9 (1933). – Max. photoeffect occurs when 4×10^{-7} g. O_2 is present per sq. cm. surface on K or 6×10^{-7} on Na. There is also a max. effect at 5×10^{-7} g. P. H. Rathmann

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

CA

Cesium sulfide and cesium selenide photocathodes P. V. Timofeev and V. V. Nalimov. *J. Tech. Phys.* (U. S. S. R.) 6, 47-52 (1936).—The cathodes are prepd. by introducing H_2S or H_2Se into evacuated bulbs contg. clean Ag mirrors, and then distg. Cs vapors onto the Ag_2S or Ag_2Se surface. The most sensitive lamps are those contg. about 40 mol. layers of Ag_2S or Ag_2Se. The max. sensitivity lies between 3500 and 4800 A. At max. sensitivity the amt. of free Cs in the Cs_2S cathodes is greater than for the Cs_2S cathodes; this causes more rapid evapn. from the surface.   P. H. Rathmann

A.S.A.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

NALIMOV, V. V.

Role of diffusion in electrode reactions occurring in spectrum analysis with spark discharge. V. V. Nalimov and K. I. Ionova (Kazakh Met. Plant). *Zhur. Anal. Khim.* 9, 76-84(1954).—A crit. review of the literature of the effect of the "third element" (Filimonov, *C.A.* 46, 5479i; 47, 3171i). To reduce drastically the effect of third elements it is necessary to destroy the crystal lattice, i.e., to melt the sample. Also, to prevent oxidation-reduction processes on the surface of the sample, it should either be completely oxidized or completely reduced (Frederickson and Churchill, *Spectrochim. Acta* 5, 507(1953)).   M. Hosch
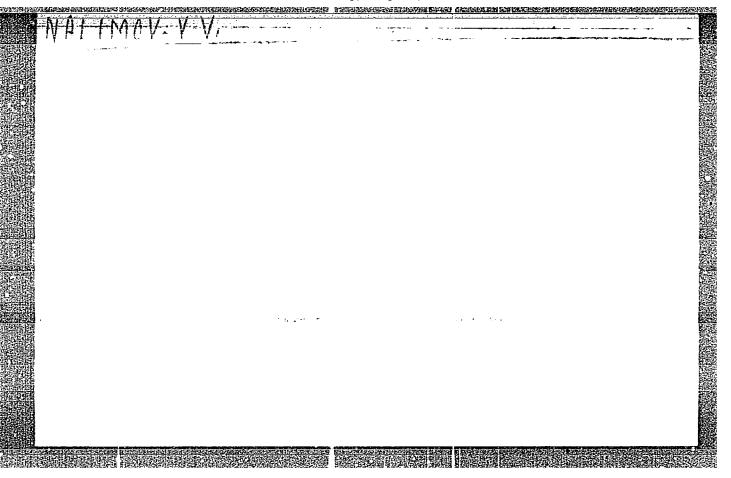
[illegible]

USSR/ Chemistry - Spectral analysis

Card   1/1   Pub. 43 - 71/97

Authors   :   Nalimov, V. V., and Ionova, K. I.

Title   :   The effect of "third elements" during spectral analysis of slag with spark excitation

Periodical   :   Izv. AN SSSR. Ser. fiz. 18/2, 286-287, Mar-Apr 1954

Abstract   :   Experiments were conducted for the purpose of observing the phenomenon of displacement of calibration curves under the effect of third elements during spectral analysis of slag and to explain whether or not it is possible to eliminate or at least reduce this effect without changing the analysis method. Brief summary of the results is presented.

Institution : The Kazakh Metallurgical Plant

Submitted   :   .....
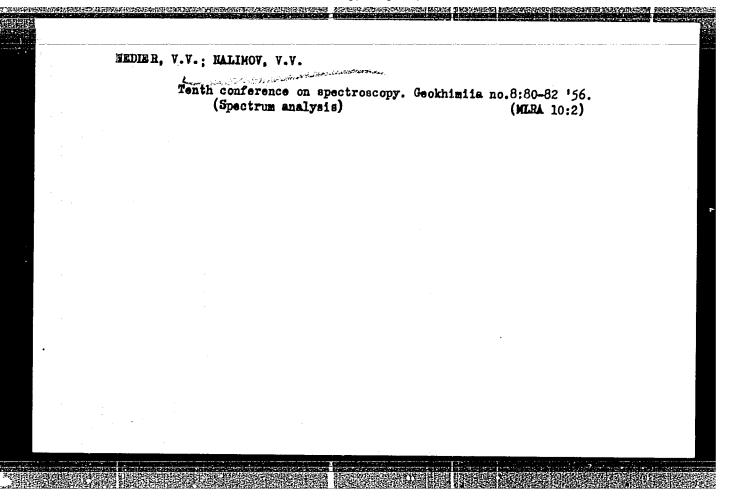
IONOVA,K.I.; NALIMOV,V.V.

Statistical study of the precision of spectrum analysis of unalloyed steel. Izv. AN'SSSR. Ser. fiz. 19 no.1:129-130 Ja-F '55.
(MLRA 8:9)

1. Kazakhskiy metallurgicheskiy zavod
(Spectrum analysis) (Spectrometer)

GENSHAFT,S.A.; NALIMOV,V.V.; PINES,V.G.

Use of mathematical statistics in the study of the reproducibility
of chemical analyses of unalloyed steel. Zav.lab.21 no.7:877-880
'55.   (MLRA 8:10)

1. Kazakhskiy metallurgicheskiy zavod
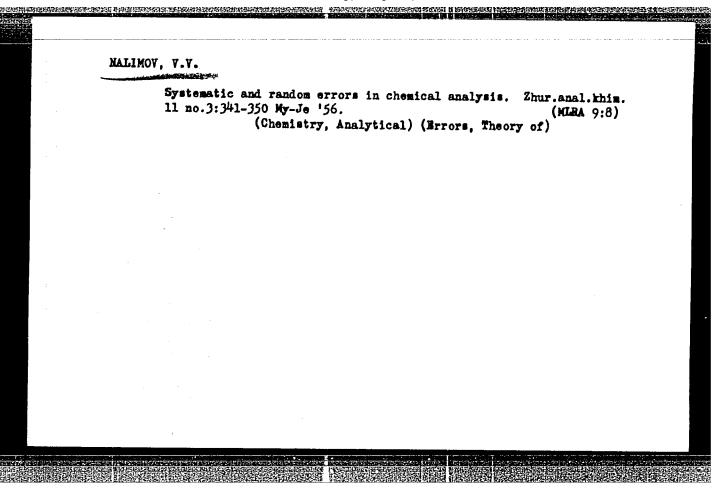   (Steel--Analysis)

NA I IMAV: V V,

NALIMOV, V. V. Cand Tech Sci -- (diss) "Differentiated study of errors in ▇▇▇
spectr_al_ and chemical analyses with the application of methods of mathematical
statistics." Len,1956.   21 pp 20 cm.   (Committee of Standards, Measures, and
Measuring Apparatus _Devices_ under the Council of Ministers USSR.   All-Union Sci-Res Inst
of Metrology im D. I. Mendeleyev), 100 copies

(KL, 7-57, 106)

_36_

NEDIER, V.V.; HALIMOV, V.V.

Tenth conference on spectroscopy. Geokhimiia no.8:80-82 '56.
(Spectrum analysis)   (MLRA 10:2)

NALIMOV, V.V.

Systematic and random errors in chemical analysis. Zhur.anal.khim.
11 no.3:341-350 My-Je '56.   (MLRA 9:8)
                    (Chemistry, Analytical) (Errors, Theory of)

Category : USSR/Optics - Optical Methods of Analysis.   Instruments   K-7

Abs Jour : Ref Zhur - Fizika, No 2, 1975, No 5174

Author   : Nalimov, V.V.
Title   : Concerning the Problem of Standardization of Methods of Emission Spectral
           Analysis

Orig Pub : Zavod. laboratoriya, 1956, 22, No 5, 621-624

Abstract : Several measures are proposed for improving the state of affairs with
           standardization of methods of emission analysis.

Card   : 1/1

NALIMOV   V. V.

Application of the analysis of dispersion to the evaluation of the
determined results [with summary in English]. Zhur.anal.khim. 12
no.2:157-165 Mr-Ap '57.   (MLRA 10:7)

1. Vsesoyuznyy institut nauchnoy i tekhnicheskoy informatsii
Gostekhniki SSSR. 2. Akademiya nauk SSSR.
      (Chemistry, Analytical)   (Mathematical statistics)

Nalimov, V.V.

AUTHORS: Nalimov, V. V., and Nedler, V. V.

TITLE: Tenth Conference on Spectroscopy (X soveshchaniye po spektroskopii)

ABSTRACT: The conference was held in Lvov from the 4th to the 14th of July, 1956. It was organized by the Spectroscopy Commission of the Section of Physico-mathematical Sciences of the Academy of Sciences of the USSR. About 1,500 delegates attended and there were 325 reports. The work was divided into two sections: section on molecular spectroscopy and section on atomic spectroscopy. The names of the principal persons making reports are given along with the subjects covered by them. The authors recommend more appearances without reports or discussion urging the use of conferences to solve organizational problems and for the formation of scientific schools.
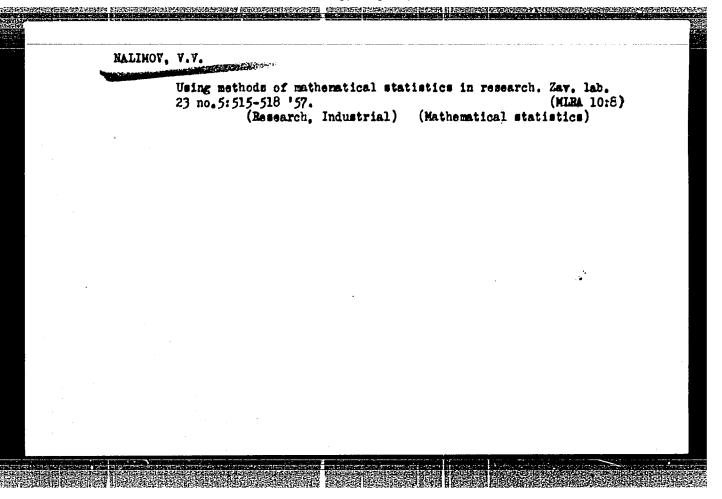
ASSOCIATION:

PRESENTED BY;

SUBMITTED:

AVAILABLE:

Card 1/1

NALIMOV, V.V.

Using methods of mathematical statistics in research. Zav. lab.
23 no.5:515-518 '57.   (MLRA 10:8)
        (Research, Industrial)   (Mathematical statistics)

NALIMOV, V. V.

IONOVA, K.I.; NALIMOV, V.V.

Statistical study of the exactitude of unalloyed steel spectro-graphic analysis. Zav. lab. 23 no.5:586-591 '57.   (MIRA 10:8)

1. Kazakhskiy metallurgicheskiy savod.
          (Steel--Spectra)   (Correlation (Statistics))

Nalimov V. V.

AUTHOR: Nalimov, V.V.   32-11-31/60

TITLE: The Problem of the Reproduction of the Spectral Analysis of Slag by
            Applying "Fulgurators" of Various Construction (K voprosu o vosproiz-
            vodimosti spektral'nogo analyza shlakov pri rabote s ful'guratorami
            raznykh konstruktsiy)

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 11, pp. 1351-1355 (USSR)

ABSTRACT: In this paper a table shows 16 various types of "fulgurators", i.e.
            devices by means of which solutions are subjected to spark discharge
            for the purpose of spectral analysis. On the basis of the numerous
            descriptions of these devices available they are described and com-
            pared. For the experiment a sample was taken of open-hearth slag, which
            was dissolved by the method developed by Nikitina (4), viz. 0.1 g of
            slag was melted at a temperature of 1000° with 2 parts soda and 3 parts
            borax and was leached out and dissolved in water up to 100 ml. It was
            leached out in 75 ml hydrochloric acid. Dichromic acid potassium salt
            was used as inner standard in the spectral analysis. The source of ex-
            citation was a generator " -2" with a distance between electrodes of
            3 mm. When using the capillary electrodes a special vessel made of
            ebonite with a rubber socket, which was drawn over the carbon elec-
Card 1/2   trode, was used. According to the "fulgurator" type selected, various

The Problem of the Reproduction of the Spectral Analysis of Slag by Applying
"Fulgurators" of Various Construction

32-11-31/60

errors occurred which are shown in a table. The best results were ob-
tained with a capillary "fulgurator" in the case of a corresponding
inner diameter of the capillaries and the surface of the upper elec-
trode. In conclusion it is said that the best reproduction of the
analysis can be obtained by carbon electrodes with a capillary
"fulgurator", in which case the results obtained are equal to those
obtained by means of revolving graphite electrodes. The latter are,
however, given preference, because they offer the possibility of
dealing also with concentrated solutions, oils, and emulsions. There
are 1 figure, 2 tables, and 6 references, 5 of which are Slavic.

ASSOCIATION: Kazakh Metallurgical Plants (Kazakhskiy metallurgicheskiy zavod)

AVAILABLE: Library of Congress

Card 2/2

Nalimov, V.V.

53-2-8/9

AUTHORS: Koritskiy, V.G., Nalimov, V.V., Nedler, V.V., Payskiy, S.M. Rusanov, A.K., Filimonov, L.N.

TITLE: A Short Survey of the Development of the Emission Spectral Analysis in the USSR (Kratkiy ocherk razvitiya emissionnogo spektral'nogo analiza v SSSR)

PERIODICAL: Uspekhi Fiz. Nauk, 1957, Vol. 62, Nr 2, pp. 435 - 454 (USSR)

ABSTRACT: A voluminous investigation of the flame spectra from a Bessemer converter (bessemerovskiy konvertor), was published in 1876 by D.K. Chernov. D.K. Chernov furthermore found several interesting laws with respect to the relation between the flame spectrum and certain stages of the Bessemer proces.(bessemerovskiy protsess). All these laws, however, were of an entirely qualitative character. First publications on spectroscopy were published in the Soviet Union at the end of the twenties. 1931 S.G. Landsberg turned his interest towards practical spectral analysis, and together with his students he started the systematic elaboration of the practical applications of the emission spectral analysis. From 1931 to 1950 about 1000 investigations were published in the scientific journals of the Soviet Union, and this number doubled up to the present. This indicates a
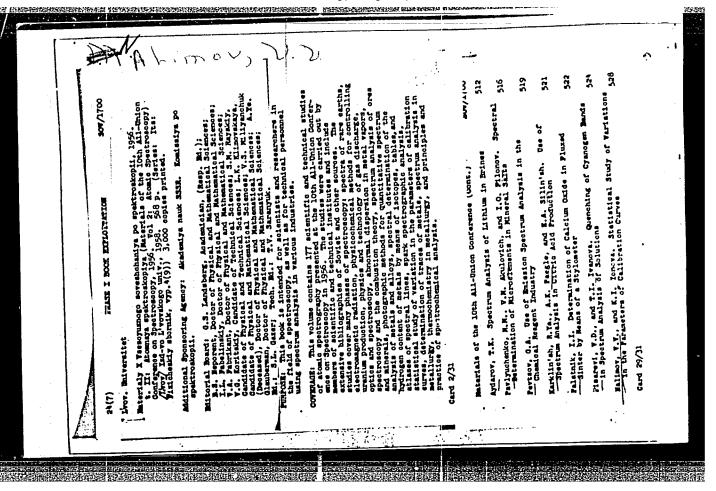
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53-2-8/9

A Short Survey of the Development of the Emission Spectral Analysis in the
USSR

very wide range of the research dealing with this subject. The
majority of this papers were published in the journal "Zavod-
naya laboratoriya" (Plant Laboratory) and "Izvestiya Akademii
Nauk SSSR, Seriya Fizicheskaya". The first section of this sur-
vey deals with apparatus for the spectral analysis. In the
machine-building industry spectral analysis is utilized for the
control of the casting of iron and non-ferrous metals as well
as for the control of semifinished products, single parts and
finished production parts. By these means the metals deliver-
ed to the plants are also controlled. Spectral analysis was
employed to a special degree in the automobile plant "ZIL". In
iron metallurgy the spectral analysis is used for the express-
analysis of steel during its production and for the final ana-
lysis, the so-called "marking analysis". Further possibilities
of application in iron metallurgy are enumerated. In the metal-
lurgy of non-ferrous metals and in iron metallurgy as well, the
semi quantitative methods of analysis are employed with success.
The spectral analysis also makes possible a fast and practical-
ly simultaneous determination of the chemical elements contain-
ed in the mineral raw materials. There are 13 figures, 3 tables
and 75 Slavic references.

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PHASE I BOOK EXPLOITATION   SOV/1700

28(7)

Lvov. Universitet

Materialy X Vsesoyuznogo soveshchaniya po spektroskopii, 1956.
t. II: Atomnya spektroskopiya. (Materials of the 10th All-Union
Conference on Spectroscopy, 1956. Vol 2: Atomic Spectroscopy)
Lvov, Izd-vo L'vovskogo univ., 1958. 568 p. (Series: Its:
Vuidiesnyi sbornik, vyp.4(9)) 3,000 copies printed.

Additional Sponsoring Agency: Akademiya nauk SSSR. Komissiya po
spektroskopii.

Editorial Board: G.S. Landsberg, Academician, (Resp. Ed.);
S.S. Eaporent, Doctor of Physical and Mathematical Sciences;
I.L. Fabelinskiy, Doctor of Physical and Mathematical Sciences;
V.A. Fabrikant, Doctor of Physical and Mathematical Sciences;
V.G. Koritskiy, Candidate of Technical Sciences; S.M. Rayskiy,
Candidate of Physical and Technical Sciences; L.K. Klimovskaya,
Candidate of Physical and Mathematical Sciences; V.S. Miliyanchuk
(Deceased), Doctor of Physical and Mathematical Sciences; A.Ye.
Glueberman, Doctor of Physical and Mathematical Sciences;
Ed.: S.L. Gazer; Tech. Ed.: T.V. Sarangyuk.

PURPOSE: This book is intended for scientists and researchers in
the field of spectroscopy, as well as for technical personnel
using spectrum analysis in various industries.

COVERAGE: This volume contains 177 scientific and technical studies
of atomic spectrography presented at the 10th All-Union Confer-
ence on Spectroscopy in 1956. The studies were carried out by
members of scientific and technical institutes and include
extensive bibliographies of Soviet and other sources. The
studies cover many phases of spectroscopy: spectra of rare earths,
electromagnetic radiation, physicochemical methods for controlling
uranium production, physics and technology of gas discharge,
optics and spectroscopy, abnormal dispersion in metal vapors,
spectroscopy and the combustion theory, spectrum analysis of ores
and minerals, photographic methods for quantitative spectrum
analysis of metals and alloys, spectral determination of the
hydrogen content of metals by means of isotopes, tables, and
statistical study of variation in the parameters of calibration
curves, determination of traces of metals, spectrum analysis in
metallurgy, thermochemistry in metallurgy, and principles and
practice of spectrochemical analysis.

Card 2/31

Materials of the 10th All-Union Conference (Cont.)   SOV/1700

Aydarov, T.K. Spectrum Analysis of Lithium in Brines   512

Pavlyuchenko, M.M., V.M. Akulovich, and I.G. Plionov. Spectral   516
  Determination of Microelements in Mineral Salts

Pevtsov, G.A. Use of Emission Spectrum Analysis in the   519
  Chemical Reagent Industry

Markli[n']sh, R.Ye., A.K. Faygle, and E.A. Silin'sh. Use of   521
  Spectrum Analysis in Citric Acid Production

Palatnik, L.I. Determination of Calcium Oxide in Fluxed   522
  Sinter by Means of a Styloscoter

Pisarevi, V.D., and T.I. Ivanova. Quenching of Cyanogen Bands   524
  in Spectrum Analysis of Solutions

Malinov, V.V., and K.I. Ioneva. Statistical Study of Variations   526
  in the Parameters of Calibration Curves

Card 29/31

5(2)

AUTHORS: Shevaleyevskiy, I. D., Nalimov, V. V., Vaynshteyn, E. Ye.

TITLE: Investigation of the Errors in X-ray Spectroscopic Analysis

ABSTRACT: The errors of X-ray spectroscopic analysis were investigated
             by quantitative X-ray spectrographic determination of zir-
             conium and hafnium in minerals and ores. The authors ascer-
             tained the relations between the parameters of the calibra-
             tion curve on the side, and changes of the working conditions
             during the analysis and the development of the spectrogram on
             the other side. Contrary to optical spectroscopic analysis
             where generally both parameters of the calibration curve
             change in the course of time, only a reciprocal parallel displa-
             cement of the calibration curve occurs in X-ray spectroscopic
             analysis. This fact permits the determinations on the basis
             of a single constant calibration curve, the position of which
             is controlled with the help of a standard with not too small
             a content of the respective element. The straying of the re-
             sults can be split up into three components: σ_R - error due

             to lack of reproducibility, characterized by the straying of

Card 1/4   the results in relation to an arithmetic mean which was cal-

Investigation of the Errors in X-ray Spectroscopic
Analysis   SOV/75-14-4-2/30

culated for a short period; σ_{Ei} - error caused by the in-
stability of the process of rubbing the sample into the anode;
$\sigma_{T'}$ - error ca...ed by other uncontrollable factors which
change in the course of time. The most important of these
factors is the lack of constancy during the development of
the film. At known values of σ_R, σ_{Ei} and $\sigma_{T'}$, the constant
calibration curve must be displaced parallelly only if the
point which corresponds to the control standard sample, is
further away than

$$\pm 2 \sqrt{\frac{\sigma_R^2}{nm} + \frac{\sigma_{Ei}^2}{m}}$$ (m - number of parallel rubbings, n -

number of parallel determinations of each rubbing). If this
parallel displacement of the curve surmounts the limits

Card 2/4 $$\pm 2 \sqrt{\frac{\sigma_R^2}{nm} + \frac{\sigma_{Ei}^2}{m} + \sigma_t^2}$$, the results are uncertain and the

Investigation of the Errors in X-ray Spectroscopic   SOV/75-14-4-2/30
Analysis

determination must be repeated. When using an anode with four slits for increasing the exactitude of the determinations, it is suitable to choose $m = 2$, $n = 2$ for the sample to be analyzed as well as for the standard. When using a constant calibration curve for rapid determinations, without the use of a control standard, an increase in the number of exposures for each rubbing is of little consequence on the results, since the error in the determination depends mainly on $\sigma_{Ei}^2 + \sigma_{T'}^2$, which quantity is not reduced thereby. The accuracy of the determination, when using a constant calibration curve, cannot be increased even by a periodical check of the calibration curve. The error analysis is fully discussed in the paper. There are the following tables: 1) and 2): Results of the examination of the hypothesis of a normal error distribution for errors in the reproducibility, and for the straying between the results of X-ray spectroscopic analysis and chemical analysis; 3) and 5): Compilation of the calculation data for the investigation of the straying which is caused by the influence of one factor (Table 3) and by the influence of two factors

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Investigation of the Errors in X-ray Spectroscopic   SOV/75-14-4-2/30
Analysis

(Table 5); 4): Root square deviations and the straying coefficients in the determination of hafnium; 6) Results of the analysis of error strayings, which was carried out by the determination of zirconium; 7) Relation between the quantity of the errors in the determination of ΔS on the one side, and the number of rubbings (m) and the number of parallel determinations (n), on the other side. There are 9 figures, 7 tables, and 12 references, 7 of which are Soviet.

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im. V. I. Vernadskogo AN SSSR, Moskva (Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy, AS USSR, Moscow)

SUBMITTED: June 12, 1958

Card 4/4

HALIMOV, V.V.; IONOVA, K.I.

Statistical consideration of the fluctuation of parameters of
calibration curves. Fiz.sbor. no.4:528-532 '58.(MIRA 12:5)

1. Kazakhskiy metallurgicheskiy zavod.
               (Spectrum analysis)

NALIMOV, V.V.

Using mathematical statistics in analytical work. Fiz.sbor.
no.4:546-549 '58.   (MIRA 12:5)

1. Kazakhskiy metallurgicheskiy zavod.
        (Spectrum analysis)   (Errors, Theory of)

NALIMOV, V. V.

SOV/75-13-4-1/29

AUTHORS: Nalimov, V. V., Nedler, V. V.

TITLE: Estimation of the Results of the Semi-quantitative Spectro-
              graphic Analysis by Means of Poisson's Distribution
              (Otsenka rezul'tatov polukolichestvennogo spektrografi-
              cheskogo analiza pri pomoshchi raspredeleniya Puassona)

PERIODICAL: Zhurnal analiticheskoy khimii, 1958, Vol. 13, Nr 4,
              pp. 379-387 (USSR)

ABSTRACT: Generally the results of the semi-quantitative spectrogra-
              phic analyses are given by means of specially manufactured
              scales for discrete values. From the variety of the results
              of analyses, however, and from the great mistakes occurring
              here it can be concluded that results of the analyses do not
              fall to a normal Gauss distribution. If the law for the dis-
              tribution of errors, however, is not known, it is not possi-
              ble to make any definite statement concerning the frequency
              of occurrence of one or the other deviation on the basis of
              the square error. In accordance with Lyapunov's theorem of
Card 1/4   the central maximum value a normal distribution can be ex-

SOV/75-13-.,-1/29

Estimation of the Results of the Semi-quantitative Spectrographic Analysis
by Means of Poisson's Distribution.

pected if the effects of the arbitrary factors which are dis-
tributed at random are summed up. This is only true under the
condition that none of them surpasses the value of majority
of the rest of the quantities. Taking the entropy as a meas-
ure for the straying of the arbitrary quantities it becomes
evident that the normal distribution of all possible distri-
butions corresponds to the highest disorder. The normal dis-
tribution is the distribution of continuous values. In prac-
tical work, however, all measuring results are more or less
discrete, as on the one hand they can only be obtained as
multiple of the smallest unity indicated by the measuring
instrument and as on the other hand the computations are al-
ways rounded. In the quantitative analysis the degree of this
separation is lower than the observed modification of the
value x to be measured; therefore this factor can be neglect-
ed in good approximation and x can be regarded as a contin-
uous quantity. In the semi-quantitative analysis things are
different as the roughly calibrated scale has an important
influence on the distribution of the results of the analyses.

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SOV/75-13-4-1/29

Estimation of the Results of the Semi-Quantitative Spectrographic Analysis
by Means of Poisson's Distribution

This influence is the preponderating factor. A systematic
error enters the unordered normal distribution, and the dis-
tribution becomes essentially discrete. Thus the conditions
for a normal distribution are not satisfied. In this case a
Poisson distribution can be expected, which can be regarded
as a special case of the normal distribution (Ref 7).
Poisson's theorem reads:

$$P_\lambda (m) = \frac{\lambda^m . e^{-\lambda}}{m!} ,$$

where λ denotes the average number of the points falling to
the range t, m = 0,1,2..., and $P_\lambda (m)$ the probability that
m points fall into the measuring range t. If Poisson's dis-
tribution is satisfied with accuracy $\sigma^2 = \lambda$ holds. In the
course of the investigations known quantities of 9 different
elements were semi-quantitatively determined. It became evi-
dent that the frequency of the distribution of the experi-
mental results agreed well with the values to be expected
Card 3/4   according to Poisson's distribution. It was interesting that

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Estimation of the Results of the Semi-Quantitative Spectrographic Analysis
by Means of Poisson's Distribution

the frequency of large errors ($m=2$, $m=3$) - inevitable in
semi-quantitative determinations - corresponded well to the
frequencies computed after Poisson. In order to be able to
judge objectively the probability of deviations of the ex-
perimental frequencies from the computed ones, criteria were
set up for the conformity. This paper is a detailed account
of the whole complex of problems. There are 1 figure, 3
tables, and 12 references, 8 of which are Soviet.

ASSOCIATION: Institut nauchnoy informatsii AN SSSR, TsNIGRI, Moskva (In-
stitute of Scientific Information AS USSR and Moscow Central
Scientific Research Institute of Geological Prospecting)

SUBMITTED: February 18, 1957

1. Spectrographic analysis—Errors   2. Data—Analysis   3. Random
distribution   4. Mathematics

Card 4/4

AUTHORS: Nalimov, V. V., Neporent, B. S.   SOV/53-65-3-8/11

TITLE: Systems of Documentation of Molecular Spectra (Sistemy dokumentatsii molekulyarnykh spektrov)

PERIODICAL: Uspekhi fizicheskikh nauk, 1958, Vol. 65, Nr 3, pp. 521-540 (USSR)

ABSTRACT: On the basis of numerous photocopies the authors discuss the various systems used in Western countries (especially in the USA) for tabulating the spectra of individual compounds including all known data. The codes in use as well as punched-card systems are discussed and compared (for instance the DMS and NBS systems). Photocopies are reproduced of all systems discussed. There are 16 figures, 2 tables, and 15 references, 1 of which is Soviet.

1. Molecular spectroscopy   2. Data--Analysis

Card 1/1

SHAYEVICH, Aron Borisovich; NALIMOV, V.V., kand.tekhn.nauk, retsenzent;
KORITSKIY, V.G., red.; TSYMBALIST, N.N., red.izd-va; TURKINA,
Ye.D., tekhn.red.

[Methods of evaluating the accuracy of spectral analysis] Metody
otsenki tochnosti spektral'nogo analiza. Sverdlovsk, Gos.nauchno-
tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, Sverdlovskoe
otd-nie, 1959. 54 p.   (MIRA 13:3)
                (Spectrum analysis)

16(2), 5(4)

SOV/48-23-9-38/57

.AUTHOR: Nalimov, V. V.

TITLE: Statistical Study During   the Analysis of a Substance

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959,
             Vol 23, Nr 9, pp 1137 - 1138 (USSR)

ABSTRACT: One of the problems of mathematical statistics consists in
             the concentration of information and in representing it in
             forms that are suited for transmission, for storing, and for
             further utilization and treatment. This applies particularly
             in connection with the continuously increasing quantity of
             investigation work. Besides, many editors of periodicals are
             forced, on account of the large quantities of publications,
             to reduce the volume of articles considerably which may lead
             to the loss of the most essential part of the information con-
             tained in a paper. The demands made in connection with the
             abridging of papers for the purpose of maintaining their infor-
             mational value are then mentioned. According to these demands,
             the exactitude of analyses, the characteristic data of samples,
             analysis results, and the complicated parts of an analytical
Card 1/3   process must be contained even in abridged papers. Next, the

Statistical Study   During   the Analysis of a   SOV/48-23-9-38/57
Substance

classification of methodical errors, the application of sta-
tistical methods in experimental planning, in the evaluation
of results, and in characterizing conditions under which a
normal distribution, a Poisson distribution, or a binomial
distribution may be expected, are discussed. The fact is
taken into account that the general theory of analytical
processes is based upon the probability theory, in which mathe-
matical statistics is used. There follows a classification
of the errors occurring in analytical methods: 1) Errors of
measurement occurring in a laboratory during experiments with-
in a short time. 2) Errors of measurement occurring in la-
boratory experiments carried out within longer intervals of
time. 3) Errors of measurement existing with respect to the
results obtained by different laboratories. The comparison
of results obtained by different measuring methods is then
discussed, after which the carrying out of emission-analyses
with the construction and application of calibration curves is
dealt with. The necessity of short and comprehensive informa-
tion is pointed out, and the principles to be followed for
Card 2/3   this purpose are given in form of three points. The applica-

Statistical   Study   During   the Analysis of a   SOV/48-23-9-38/57
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tion of mathematical statistics in plotting calibration
curves in the case of a given number of samples and the
interval of the possible values depending on   the number
of samples, on the interpretation of experiments, and on
the root-mean square error are outlined. In conclusion it is
stated that the planning of experiments, working out the re-
sults, and the representation of the material must be carried
out according to standards. Furthermore, as standard measure
for the straying of measuring values only the root mean-
square error is recommended for use.

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16(2),9(5)

SOV/53-69-1-2/11

AUTHORS: Vleduts, G. E., Nalimov, V. V., Styazhkin, N. I.

TITLE: The Scientific and Technical Information as a Problem of Cybernetics (Nauchnaya i tekhnicheskaya informatsiya kak odna iz zadach kibernetiki)

PERIODICAL: Uspekhi fizicheskikh nauk, 1959, Vol 69, Nr 1, pp 13-56 (USSR)

ABSTRACT: The material of this instructional article is taken completely From Western, above all American, publications. The authors point out that the further development of science takes place exponentially. This is illustrated by means of diagrams: Figure 1, beginning from 1900 up to 1955, shows the increase of the total number of scientific works abstracted in "Physics Abstracts", figure 2 (in semilogarithmic scale) shows the also exponential increase in scientific periodicals and abstracting periodicals. Of the first there now exist nearly 100,000, the number of abstracting periodicals is near 300. The abstracting periodicals published by the Institut nauchnoy i tekhnicheskoy informatsii AN SSSR (Institute of Scientific and Technical Information of the AS USSR) contain abstracts from works published in 11 - 12,000 scientific periodicals. This number does not include social science periodicals. Further details nearly

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The Scientific and Technical Information as a   SOV/53-69-1-2/11
Problem of Cybernetics

all concern the USA. Chapter 2 concerns mechanized and
statistical methods of abstracting articles. It is pointed out
that the Institute of Scientific and Technical Information of
the AS USSR at present has 12,000 special abstracters. In view
of the exponential increase of scientific work, this number
ought to increase to 12,000,000 after 100-150 years, which
confirms the necessity of mechanizing the work of abstracting.
The mechanical-statistical method is described according to
Luhn (Ref 12). Chapter 3 deals with documentation by means of
punched card systems. In principle, the Eastman Kodak Minicard
System (USA) and the Filmorex System (France) are described,
and the DMS (Great Britain, West Germany) System for the
documentation of molecular spectra are discussed and demon-
strated on the basis of numerous examples. Chapter 4 is devoted
especially to documentation in the field of chemistry and gives
a large number of examples from the USA. In this connection also
a memory machine constructed by the Laboratoriya elektro-
modelirovaniya (Laboratory for Electrical Simulation)of the
VINITI AS USSR under the supervision of Professor

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The Scientific and Technical Information as a   SOV/53-69-1-2/11
Problem of Cybernetics

L. I. Gutenmakher is mentioned. Chapter 5 occupies itself
with the representation of results obtained by experimental
work in a form corresponding to that of the punched card
system. Chapter 6 deals with descriptive index-binding, which
is explained on the basis of some examples from the USA. In
connection with the algebra of logics, the comments by
Professor S. A. Yanovskaya to reference 67 are mentioned.
Chapter 7 is devoted to the attempt at creating an artificial
language of information for the mechanized search for
information. Examples (taken from Machine Literature Searching)
(Refs 56, 57) are discussed. Chapter 8 deals with the attempt
at establishing a logical-mathematical theory of a system of
searching for information, which is based on references 56, 57,
and 60. The references mentioned as being "Soviet" are mainly
translations of western publications published in the USSR.
There are 24 figures, 2 tables, and 70 references, 12 of which
are Soviet.

Card 3/3

PHASE I BOOK EXPLOITATION   SOV/4071

Malimov, Vasiliy Vasil'yevich

Primeneniye matematicheskoy statistiki pri analize veshchestva (Application
of Mathematical Statistics to the Analysis of Matter). Moscow, Fizmatgiz,
1960. 430 p. (Series: Fiziko-matematicheskaya biblioteka inzhenera)
8,000 copies printed.

Ed.: A. L. Leshchinskiy; Tech. Ed.: V. N. Kryuchkova.

PURPOSE: This book is intended for engineers, physicists, and chemists
working in analytical laboratories. It can be used as a reference book
on the application of mathematical statistics to the analysis of matter.

COVERAGE: The book attempts to systematize and generalize recent results
in statistical analyses connected with the analysis of matter. Fundamental
theorems from mathematical statistics are explained by examples taken
from works pertaining to the analysis of matter. The book studies only
those statistical methods already applied to the laboratory analysis of
matter which have been brought to light in periodical literature. Thus
the book discusses the application of mathematical statistics to chemical
and physical methods of analyzing matter, and pays great attention to the

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Application of Mathematical Statistics (Cont.   SOV/4071

physical interpretation of the results of statistical investigations. The subject matter is illustrated by numerous examples accompanying numerical computations. The work of foreign scientists in this field is discussed in detail. No personalities are mentioned. There are 183 references: 64 Soviet (6 of which are translations), 96 English, 14 German, 8 French, and 1 Polish.

TABLE OF CONTENTS:

S/074/60/029/011/002/002
B005/B054

AUTHOR: Nalimov, V. V.

TITLE: Statistical Methods of Investigating the Optimum Conditions
            for the Course of Chemical Reactions

PERIODICAL: Uspekhi khimii, 1960, Vol. 29, No. 11, pp. 1362-1387

TEXT: In the present paper, the author describes a new method of
determining the optimum conditions for the course of chemical reactions.
This new method, suggested in 1951 by Box and Wilson (Ref. 1), makes use
of modern mathematical statistics for the planning of experiments and
the evaluation of their results. The number of experiments to be carried
out and their arrangement in the multidimensional factor space are
determined on the basis of certain mathematically founded rules. In con-
trast with the classical methods of experimental arrangement, in which
only one factor was changed in each experiment, all factors concerned
are varied in the new method at the same time. The specific way is of
great importance, which makes it possible to carry out the first stages
of investigation with a small number of experiments which show the

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Statistical Methods of Investigating the
Optimum Conditions for the Course of
Chemical Reactions

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direction for the further experiments. The new method reduces experimental
work considerably. Information is obtained not only on the basic effects
but also on the effects of mutual influence which are not covered by the
ordinary classical methods. At the final stage of the experiment, results
are obtained in the form of equations for determining the optimum con-
ditions for the process with a change of a number of factors, e.g., the
properties of the initial products. The major part of the present paper
is an abridged and revised translation of Chapter 11 of the American book
"The Design and Analysis of Industrial Experiments" by O. L. Davies,
published in 1956 by Hafner Publishing Co., New York (Ref. 2). It
thoroughly explains the Box-Wilson method, and illustrates it by examples.
This abridged translation is divided into four sections: description of
the method; determination of the almost steady range; experimentation in
this range; the case of a large number of independent variables. For
practical applications of the method described it is necessary to be
familiar with dispersion analysis, regressive analysis, and also the
matrix algebra. For this reason, a cooperation between chemists and
mathematicians is desirable for a successful application of the method.
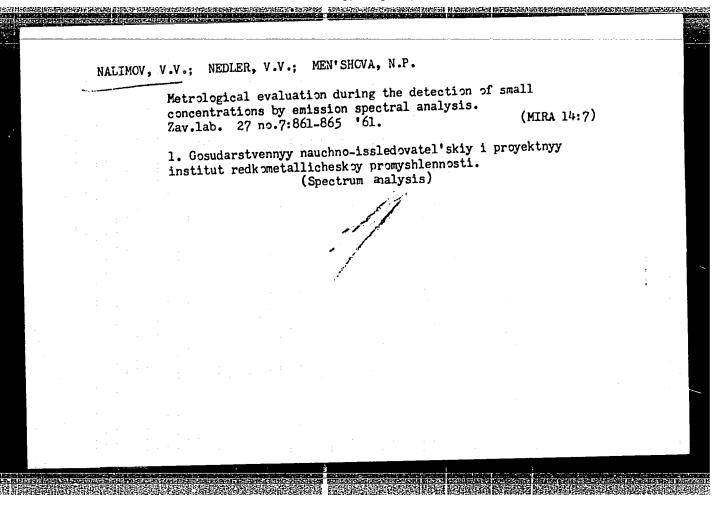
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Statistical Methods of Investigating the
Optimum Conditions for the Course of Chemical
Reactions

S/074/60/029/011/002/002
B005/B054

The Box-Wilson method is still under development. The material published
in the present paper should give a clear concept of the basic idea of
the method. At the end of his paper, the author gives, for reasons of
completeness, a short survey of papers dealing with the application of
the method described. The method is already much in use in the UK and the
USA. The author points out that a mutual integration is achieved by the
new system of planning and interpreting the experiment, on the one hand,
and the theoretical notions well known among chemists, on the other.
With the aid of theoretical considerations, the general framework of the
experiment is laid down, the factors to be varied are selected, and the
levels for the variations are determined. Within this framework, the new
statistical method described gives the optimum conditions for the process.
There are 12 figures, 18 tables, and 26 references: 1 Soviet, 19 US,
1 Dutch, and 2 British.

Card 3/3

NALIMOV, V.V.;   NEDLER, V.V.;   MEN'SHCVA, N.P.

Metrological evaluation during the detection of small
concentrations by emission spectral analysis.
Zav.lab. 27 no.7:861-865 '61.   (MIRA 14:7)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy
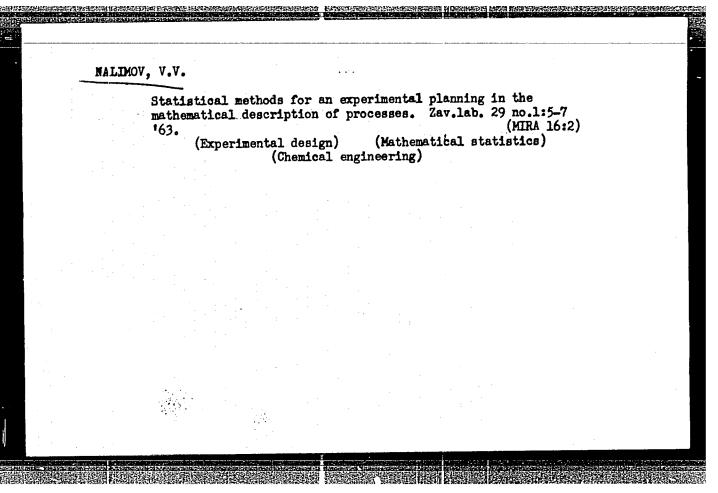institut redkometallicheskoy promyshlennosti.
                    (Spectrum analysis)

BERNSHTEYN, L. Ye.; NALIMOV, V.V.; FAL'KOVA, O.B.

Planning of an experiment and presentation of its results in the
estimation of the precision and accuracy of spectral methods of
analysis of geological specimens. Zav.lab. 27 no.10:1254-1260
'61.   (MIRA 14:10)

1. TSentral'nyy nauchno-issledovatel'skiy geologorazvedochnyy
institut i Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy
institut redkometallicheskoy promyshlennosti.
              (Niobium oxide--Spectra)

VLASOVA, I.V.; DENISOV, A.F.; ZIMINA, G.V.; MARUNINA, N.I.; NALIMOV, V.V.;
SUKHOV, G.V.

Application of consecutive analysis to radiometric measurements.
Zav.lab. 27 no.10:1261-1264 '61.   (MIRA 14:10)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut
redkometallicheskoy promyshlennosti.
                    (Radioisotopes).

NALIMOV, V.V.

Establishing standards for the presentation of experimental data.
Zav.lab. 27 no.10:1268-1273 '61.   (MIRA 14:10)
                        (Mathematical statistics)

NALIMOV, V.V.; NEDLER, V.V.; ARAKEL'YAN, N.A.

Increase in the sensitivity of emission spectrum analysis using
information on the line contour. Zav.lab. 28 no.3:324-329 '62.
(MIRA 15:4)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy
institut redkometallicheskoy promyshlennosti.
(Spectrum analysis)

State Su Res and Planning Inst of RareMetals

Moscow,

NALIMOV, V.V.

Methods of cybernetics should be used in laboratory practice. Zav.lab.
28 no.7:771-772 '62.   (MIRA 15:6)
            (Cybernetics)   (Engineering laboratories)

NALIMOV, V.V.

    Statistical methods for an experimental planning in the
mathematical description of processes. Zav.lab. 29 no.1:5-7
'63.   (MIRA 16:2)
     (Experimental design)   (Mathematical statistics)
            (Chemical engineering)

S/032/63/029/001/014/022
B104/B186

AUTHORS: Granovskiy, Yu. V., Chernova, N. A., Adler, Yu. P., Nalimov, V. V., Komissarova, L. N., and Spitsyn, Vik. I.

TITLE: A mathematical model for the extractive separation of hafnium and zirconium by tributyl phosphate

PERIODICAL: Zavodskaya laboratoriya, v. 29, no. 1, 1963, 60-65

TEXT: Improvement of the conditions for separating zircon and hafnium from nitric acid solutions using tributyl phosphate is studied by the Box-Wilson method (G. E. Box, K. B. Wilson, J. Roy Stat. Soc. (B), 13, 1 (1951)). The following independent variables were selected: X_1 is the concentration of the metals for the sum of $Zr(Hf)O_2$ (g/l); X_2 is the concentration of the acid in the aqueous initial solution (gramm equivalent/liter); X_3 is the concentration of the tributyl phosphate in o-xylene (volume-%); X_4 is the phase ratio $V_0 : V_B$. The optimization parameter is the separation factor y. Different series of experiments

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A mathematical model for the ...

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show the appropriate programming matrices with the results. These are used to determine the direction in which the independent variables must be varied. For the separation factor the regression equation

$$y = 13,3478 - 0,1496X_1 + 1,5036X_2 -$$
$$- 0,6393X_3 + 0,2635X_4 + 0,1078X_1^2 -$$
$$- 1,3422X_2^2 - 0,7798X_3^2 + 0,0200X_4^2 -$$
$$- 0,0181X_1X_2 + 0,4756X_1X_3 +$$
$$+ 0,6432X_1X_4 - 0,1431X_2X_3 -$$
$$- 0,0506X_2X_4 + 0,1931X_3X_4.$$

is obtained, where $X_i = (\widetilde{X}_i - \widetilde{X}_{io})/\widetilde{X}_{iA}$, $\widetilde{X}_i$ is here the value of the natural variable, $\widetilde{X}_{io}$ and $\widetilde{X}_{iA}$ are the values of the reference point in the phase space and the variation interval. This equation describes the experimental results. By displacement along the coordinate axes X_i, separation factors (22.8 and 28.2) could be obtained which were larger than those hitherto known. Further, the model can be used to compensate Card 2/3

A mathematical model for the ...

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uncontrolled changes of one or several variables by changing other
variables arbitrarily. There are 1 figure and 4 tables.

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              promyshlennosti
              (Moscow State University and State Design and Planning
              Scientific Research Institute of the Rare Metals Industry)

Card 3/3

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S/032/63/029/001/015/022
B104/B186

AUTHORS: Komissarova, L. N., Granovskiy, Yu: V., Prutkova, N. M., Adler, Yu. P., Nalimov, V. V., and Spitsyn, Vik. I.

TITLE: Determination of optimal extraction conditions for microquantities of hafnium using tributyl phosphate

PERIODICAL: Zavodskaya laboratoriya, v. 29, no. 1, 1963, 65-68

TEXT: Optimum conditions for extracting microquantities of hafnium from nitric acid solutions using tributyl phosphate are sought by means of the Box-Williams method (V. V. Nalimov, Uspekhi khimii, 29, 11, 1362 (1960), Zavodskaya laboratoriya, v. 29, no. 1, 1963, 60, G. E. Box, K. B. Wilson, J. Roy Stat. Soc. (B), 13, 1 (1951)). Parameters: X_1 is the concentration of the nitric acid in the aqueous initial solution (N); X_2 is the concentration of tributyl phosphate in o-xylene (volume-percent); X_3 is the phase ratio ($V_o : V_B$); X_4 is the extraction time (min). The optimization parameter is the hafnium distribution factor y. Working from an arbitrarily

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Determination of optimal extraction ...

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chosen point in the X_i space and using programming matrices with the results of three test series, it is determined how the test conditions must be varied, in order to achieve an optimum distribution factor. In the three series it was possible to obtain distribution factors of 44,0, 160,0 and 303,0 respectively. There are 5 tables.

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Card 2/2

S/032/63/029/001/016/022
B104/B186

AUTHORS: Khomyakov, P. P., Masterova, A. P., Adler, Yu. P., and
Nalimov, V. V.

TITLE: Optimization of chloridizing a titanium-containing concentrate

PERIODICAL: Zavodskaya laboratoriya, v. 29, no. 1, 1963, 68-69

TEXT: In investigating the chloridization of a titanium-containing
concentrate the ferrous chloride yield y was chosen as optimization
parameter, this being closely related to the components of the melt.
Temperature concentration of the alkali metal chlorides and the
production rate of $FeCl_2$ in the reactions $2FeO + C + 2Cl_2 = 2FeCl_2 + CO_2$

and $2FeO + 2Cl_2 = 2FeCl_2 + O_2$ influence the stability of these
compounds. Independent variables: X_1 is the concentration of ore in the
melt (%), X_2 is the temperature ($^\circ C$), X_3 the concentration of KCl in the
melt (%), X_4 the concentration of carbon in the melt (%). The
experimenter knew that y was close to an extreme. The object is to find
Card 1/2

Optimization of chloridizing a ...

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the maximum of y with a minimum of work. The interactions X_1X_3, X_2X_3 and X_3X_4 are regarded as the most significant of the factors influencing the process. To obtain the interaction effects on the chloridizing process a minimum of eight tests was necessary. Considering the fact that y is close to an extreme, the conditions where y has a maximum are determined in eight tests by means of the programming matrix. The initial levels were: X_1 = 7.5, X_2 = 725, X_3 = 65, X_4 = 4. The variation interval of X_1 is 1, of X_2 25, of X_3 10 and of X_4 1. There is 1 table.

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Card 2/2

S/032/63/029/001/018/022
B104/B186

AUTHORS: Khomyakov, P. P., Adler, Yu. P., and Nalimov, V. V.

TITLE: Investigation of the factors influencing the chloridizing
              properties of titanium slags in the melt

PERIODICAL: Zavodskaya laboratoriya, v. 29, no. 1, 1963, 75-77

TEXT: Using the method by G. E. Box and K. B. Wilson (J. Roy Stat. Soc.
(B), 13, 1 (1951)) with programming matrices for experiments, the
influence of the following factors on the chloridizing rate of titanium
slags is investigated: chlorine consumption, temperature, carbon
concentration, concentration of titanium dioxide in the melt, composition
of the slag, composition of the melt. In 16 tests, 15 variables of the
system were varied within so close a range that the results could be described
by a polynomial of first order. It was possible to increase the
chloridizing rate to 3.5 times the values hitherto known by using program-
ming matrices and by neglecting effects of interaction. There is 1 table.

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Investigation of the factors ...   S/032/63/029/001/018/022
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S/032/63/029/003/011/02u
B112/B186

AUTHORS: Granovskiy, Yu. V., Nikishova, V. V., Adler, Yu. P.,
              Nalimov, V. V., and Komissarova, L. N.

TITLE: Sifting experiments for investigating the extraction of
              zirconium from tributylphosphate

TEXT: Those influences which predominatingly affect the process of extrac-
tion of zirconium from tributylphosphate are selected by the method of
random balance. The following variables are codified: concentration of
the metal (A), concentration of the acid (B), concentration of the reagent
(C), volume of the restricted phase (D), extraction time (E), revolution
velocity of the mixers during extraction (F), volume of the re-extragent
(G), number of re-extractions (H), re-extraction time (I), revolution
velocity of the mixers during re-extraction (J), time of phase separation
after extraction (K), time of phase separation after re-extraction (L).
The results of the experiments are represented in the dispersion diagram
(Fig. 1). The selection of the predominating effects A, B, C, AB, BC, and
CD was obtained under conditions at which 78 effects (12 linear and 66 pair
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Sifting experiments for...

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interactions) could be of importance. There are 6 figures and 5 tables.

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State Scientific Research and Planning Institute of Rare-Metal
Industry)

Card 2/2

S/032/63/029/003/012/020
B101/B186

AUTHORS: Komissarova, L. N., Granovskiy, Yu. V., Prutkova, N. M.,
             Adler, Yu. P., and Nalimov, V. V.

TITLE:.   Application of mathematical experimental programming methods
             to studying the extraction of zirconium

PERIODICAL: Zavodskaya laboratoriya, v. 29, no. 3, 1963, 327 - 330

TEXT: For extracting zirconium by means of tributylphosphate (TBP) three
possible reaction equations are written down: $Zr^{4+} + 4NO_3^- + TBP \rightleftharpoons Zr(NO_3)_4 \cdot TBP$;
$Zr^{4+} + 4NO_3^- + 2TBP \rightleftharpoons Zr(NO_3)_4 \cdot 2TBP$; $Zr^{4+} + 2H^+ + 4NO_3^- + 2TBP \rightleftharpoons Zr(NO_3)_4 \cdot 2TBP$
$+ H_2O$. The equations for the apparent extraction constants $\tilde{K}_e$ are
linearized to: $\log D = \log \tilde{K}_{e_1} + 4 \log X_H + \log T$; $\log D = \log \tilde{K}_{e_2}$
$+ 4 \log X_H + 2 \log T$; $\log D = \log \tilde{K}_{e_3} + 6 \log X_H + 2 \log T$. Here X_H is the
equilibrium concentration of the hydrogen ions, T is the concentration of

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Application of mathematical experimental...   S/032/63/029/003/012/020
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the free TBP in the organic phase, D the distribution factor. The follow-
ing independent variables were chosen for programming: $X_1 = \log_2 X_H - 1.5$
and $X_2 = 2(\log_2 T + 2.5)$. The dependent variable is $y = \log_2 D$. The re-
gression equation $y = -4.2230 + 3.609236X_1 + 0.7768862X_2 + 0.7814312X_1^2$
$+ 0.5988127X_2^2 + 0.000725X_1X_2$. The extraction was performed using TBP diluted
with xylene. The distribution was examined with $1 \cdot 10^{-5}$ mole/l Zr^{95}. The
value of X_H was varied from 1.053 to 7.50 and that of T from 0.108 to
0.250. The center of the experiment was close to $X_H = 2.83$, $T = 0.177$.

Results: None of the three reaction equations describes the extraction
process correctly. The data obtained from the regression equation do not
agree with the experimental ones. Sidereactions, as e.g. the formation of
different solvates and complexes (such as the complex $H_{n-2}ZrO(NO_3)_n$) are
likely to occur. Nevertheless the regression equation can be used to
estimate.D. Here the error is four times the experimental error. There are
2 tables.

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Application of mathematical experimental...   S/032/63/029/003/012/020
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             the Rare Metals Industry)

Card 3/3

KHOMYAKOV, P.P.; ZHELTOVA, V.I.; ADLER, Yu.P.; NALIMOV, V.V.

Study of heat conductivity of distillates formed during chlorination of titanium slag in the melt. Zav.lab. 29 no.3:330-331 '63.

(MIRA 16:2)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut redkometallicheskoy promyshlennosti.

(Titanium compounds)
(Chlorination)
(Heat capacity)